

Chatham, Massachusetts
Nitrogen Loading Regulation
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Health Regulation
Adopted: 1989

B0H89-2
Town of Chatham~ Board of Health
Interim
NITROGEN LOADING REGULATION

Section I

1.1 Authority: The Town of Chatham Board of Health, in accordance with, and under the authority of, Chapter 111-Section 31 of the Massachusetts General Laws, hereby adopts the following rules and regulations.

1.2 Effective date: October 26 1989

Section 2 Findings and Purposes

Whereas, many houses were built in the Town of Chatham prior to the 1950's, at a time when much of the Town was developed as a summer retreat. Most of these houses were constructed with individual on-site wells for water supply and individual on-site sewage disposal systems (i.e., cesspools or septic tanks with leaching fields) for wastewater disposal.

Health officials now realize that the on-site soil and hydrological conditions of these lots are in many situations inadequate for sanitary and environmentally safe wastewater disposal. This is particularly so in light of the high density of development found in the older subdivisions. Furthermore, health officials now realize that soil conditions throughout Chatham are generally such that wastewater can migrate rapidly from individual sewage disposal systems to nearby surface waters and well sites.

Inadequately treated wastewater effluent presents various threats to the public health and water quality. Because these threats are better understood today than they were in previous years, many houses and small commercial developments in Chatham could not now be constructed with individual on-site sewage disposal systems under current zoning and health regulations. In Chatham, the minimum lot size permitted for houses with individual sewage disposal systems is currently 20,000 square feet. This compares with the 5,000-15,000 square foot lots common in older subdivisions.

Health officials now realize that the cumulative impact of numerous adjacent septic systems, given the sandy soil conditions prevalent in Chatham, jeopardizes the quality of surface and groundwaters. The effluent from these septic systems has a high potential of contaminating

groundwater and surface waters. This can lead to closures of shellfishing areas, prohibitions on water contact activities and have a detrimental effect on the ecosystem. The threat is due not only to contaminants such as fecal coliform bacteria and infectious pathogenic viruses and other bacteria associated with fecal discharges, and chemicals from household products, but also to the long-term build-up of nitrates in both ground and surface waters and phosphorus in surface waters.

Nitrogen compounds found in septic system effluent can cause contamination of drinking water, particularly when systems are located in highly porous sandy soils. Consuming too much nitrate can have fatal results. For infants in the first six months of life, ingesting excessive nitrate can produce methemoglobinemia ("blue baby syndrome"). There is also evidence that nitrite can convert to nitrosamines---known cancer-causing agents. Excessive nitrogen can also produce nutrient loading of surface waters that can result in

algae blooms that choke aquatic life. Nitrate contamination is also a "marker"---high concentrations show that other forms of contamination exist in the water.

The two principal sources of nitrogen contamination and nutrient loading are sewage effluent from individual sewage disposal systems and fertilizers from lawn care practices.

There is increasing pressure in Chatham to expand houses in order to accommodate full-time year-round use and increased occupancy. This expanded and intensified use increases the discharge of wastewater effluent and increases the threats to the public health and environmental safety from contaminants found in effluent.

Because of the prevalence of ponds, streams, and other surface water bodies in Chatham, virtually the entire town is located within areas that are critical for protecting the quality of surface waters and where the discharge of wastewater effluent is likely to degrade water quality and jeopardize shellfishing and water contact activities.

Because of the Town's reliance on groundwater for public and private drinking water, virtually the entire town is located within areas that are critical for protecting groundwater quality, and where the discharge of residential wastewater effluent is likely to threaten the quality of drinking water.

Therefore, to prevent further contamination of surface and groundwater resources, and to address threats to the public health that result from increased wastewater discharge, the Board of Health of the Town of Chatham has determined that immediate measures must be taken. This regulation represents the minimum step necessary to protect the public health from the adverse effects from the discharge of nitrates and other contaminants from individual on-site sewage disposal systems into the Town's surface and ground waters.

Section III Definitions

For the purposes of this regulation, the following definitions shall be applied:

3.1 Multi-unit housing: Condominiums, apartments, apartments incidental to commercial space, congregate, cluster or attached housing where the land is communally owned but the individual units are either owned or rented and where the total Title V sewage flow for the lot(s) is less than 2000 gallons per day. (For developments producing more than 2000 gallons per day, the Town of Chatham Sewage Discharge Permit regulation will apply.)

3.2 Residential Subdivisions: Subdivisions as defined in MGL Chapter 41, Section 81L, where lots are created and intended for the construction of single-family homes.

3.3 Bedroom: A room that provides the minimum isolation necessary to provide privacy for sleeping, separable from other rooms by a door and containing a closet.

Section 4 Applicability

4.1 The following projects shall be subject to the provisions of this regulation (this also includes all properties served by Town Sewer):

- a. New commercial development with a Title V sewage flow of under 2000 gallons per day.
- b. Existing commercial development with a Title V sewage flow of under 2000 gallons per day where a change in use is proposed that will increase sewage flow over existing use but still less than 2000 gallons per day.
- c. New residential subdivisions.
- d. Construction of multi-unit housing.
- e. Construction of single-family dwellings.
- f. Alterations or additions to existing dwellings where a new bedroom(s) are being added.

Section 5 Procedures

5.1 Residential subdivisions. At the time of definitive plan review, every applicant shall demonstrate by written report to the Board of Health that the nitrogen loading, calculated as hereinafter described, will not exceed ten (10) parts per million (ppm) for the property as a whole or shall specify on the Order of Conditions attached to the definitive plan that each building lot shown on such plan shall be subject to review under this regulation prior to the issuance of a building permit.

5.2 Construction of multi-unit housing. At the time of formal site plan review, every applicant shall demonstrate by written report to the Board of Health that the nitrogen loading, calculated as hereinafter described, will not exceed ten (10) parts per million (ppm) for the property as a whole.

5.3 Construction of single-family dwellings or additions to existing dwellings where new bedrooms are being added. At the time of application for a Disposal Works Permit for a septic system(s), every applicant shall demonstrate by written report to the Board of Health or its' Agents, that the nitrogen loading, calculated as hereinafter described, will not exceed ten (10) parts per million (ppm) for any individual lot.

5.4 No Disposal Works Permit shall be issued by the Board of Health or its' Agents for any of the above described projects, unless nitrogen loading does not exceed the maximum often (10) parts per million (ppm).

Section 6 Nitrogen Loading Calculations

Nitrogen loading for the purposes of this regulation, shall be calculated as in the attached form entitled "Chatham Board of Health Nitrogen Loading Calculations."

Section 7 Variances

7.1 Variance from this regulation may be granted by the Board of Health only if the applicant (1) demonstrates to the satisfaction of the Board that a literal enforcement of this regulation would involve substantial hardship, financial or otherwise, to the petitioner(s), i.e.: would deprive the landowner of all reasonable use of the lot in question, or (2) proves to the Board that the installation of an on-site subsurface sewage disposal system, or systems, would not measurably contribute nitrate to any surface or subsurface water resource in which there is a threat of contamination due to nitrogen loading or threat of degradation due to nutrient loading.

7.2 This regulation shall not prohibit the construction of up to a 2 bedroom house on any lot providing all other applicable requirements are met.

7.3 Every request for a variance shall be made in writing and shall state the specific variance sought and the reasons therefore. No variance shall be granted except after the applicant has notified all abutters by certified mail at his own expense at least 10 days

before the Board of Health meeting at which the variance request will be on the agenda. The notification shall state the specific variance sought and the reasons therefore.

7A If applying for a variance under Subsection 7.1(1) above, the petitioner shall submit a nitrogen loading report using the formula supplied in the body of this regulation showing several different methods of dealing with the nitrogen load on the property. The petitioner will also submit written documentation as to why the enforcement of this regulation would cause hardship. The Board reserves the right to require more information of the petitioner in reviewing the variance.

7.5 If applying for a variance under Subsection 7.1(2) above, the applicant shall be required to submit, but not be limited to, the following data prepared by a qualified professional: nitrogen loading report, hydrogeologic report including direction of groundwater flow, depth to groundwater, population density and build-out study, soil conditions, topography, a map showing the position of the lot(s), surrounding surface waters, wetlands, etc., existing and known future drinking water supply wells, buildings, and any other information deemed pertinent. The Board of Health reserves the right to require only approved modeling and input variables for the groundwater study.

7.6 The Board will consider the following factors when reviewing a variance application: (1) there is a significant setback to surface water supplies (e.g., 1000 feet or greater); (2) the depth to groundwater is great (e.g., greater than 10 feet); 3. e.g., there are no present or future private or public drinking water wells within 2500 feet; and (4) the applicant has made every effort to be sensitive to and balance density and use vs. environmental resources.

7.7 Any variance granted by the Board of Health shall be in writing. Any denial of a variance shall also be in writing and shall contain a brief statement of the reasons for the denial. A copy of each variance shall be available to the public at all reasonable hours in the office of the Board of Health while it is in effect.

7.8 Any variance or other modification authorized to be made by this regulation may be subject to such qualification, revocation, suspension, or expiration as the Board of Health expresses in its grant. A variance or other modification authorized to be made by this regulation may otherwise be revoked, modified, or suspended, in whole or in part, only after the holder thereof has been notified in writing and has been given an opportunity to be heard, in conformity with the requirements for an order and hearing of 310 CMR 11.07 and 11.08.

Section 8 General Enforcement

The provisions of Title 1 of the State Environmental Code (310 CMR 11.00) shall govern the enforcement of this regulation as supplemented herein.

Section 9 Orders: Service and Content

9.1 If an examination as provided for in Title 1 (310 CMR 11.00) reveals failure to comply with the provisions of the regulation the Board of Health shall order the person(s) responsible to comply with the violated provision.

9.2 Every order authorized by this regulation shall be in writing. orders issued shall be served on all persons responsible for the violated regulations. An order shall be served on the designated person:

- a. Personally, by any person authorized to serve civil process, or
- b. by any person authorized to serve civil process by leaving a copy of the order at his last and usual place of abode, or
- c. by sending him a copy of the order by registered or certified mail, return receipt requested, if he is within the Commonwealth, or
- d. If his last and usual place of abode is unknown or outside the Commonwealth, by posting a copy of the order in a conspicuous place on or about the affected premises and by advertising it for at least three out of five consecutive days in one or more newspapers of general circulation within the municipality wherein the building or premises affected is situated.

9.3 Subject to the emergency provision of Title 1 any order issued under the provisions of this regulation shall:

- a. Include a statement of the violation or defect, and may suggest action which, if taken, will effect compliance with this regulation, and
- b. allot a reasonable time for any action it requires, and
- c. inform the person to whom it is directed of his right to a hearing, of his responsibility to request the hearing, the time-frame in which the response must be made, and to whom the request shall be directed.

Section 10 Hearing

10.1 Unless otherwise specified in this regulation, the person or persons to whom any order has been served pursuant to this regulation may request a hearing before the Board of Health by filing with the Board of Health within 7 days after the day the order was served, a written petition requesting a hearing on the matter. Upon receipt of such petition, the Board of Health shall set a time and place for the hearing and shall inform the petitioner thereof in writing. The hearing shall be held not later than 30 days after the day on which the order was served. The Board of Health, upon application of the petitioner, may postpone the date of hearing for a reasonable time beyond such 30 day period if in the judgement of the Board of Health the petitioner has submitted a good and sufficient reason for such postponement.

10.2 At the hearing, the petitioner shall be given an opportunity to be heard and to show cause why the order should be modified or withdrawn.

10.3 After the hearing, the Board of Health shall sustain, modify, or withdraw the order and shall inform the petitioner in writing of its decision. If the Board of Health sustains or modifies the order, it shall be carried out within the time period allotted in the original order or in the modification.

10.4 Every notice, order, or other record prepared by the Board of Health in connection with the hearing shall be entered as a matter of public record in the office of the Board of Health.

10.5 If written petition for a hearing is not filed with the Board of Health within 7 days after the day an order has been served or if after the hearing the order has been sustained in any part, each day's failure to comply with the order as issued or modified shall constitute an additional offense.

Section 11 Appeal

Any person aggrieved by the final decision of the Board of Health may seek relief therefrom within 30 days in any court of competent jurisdiction, as provided by the laws of the Commonwealth.

Section 12 Penalties

12.1 Any person who shall violate any provision of the regulation for which penalty is not otherwise provided in any of the General Laws or in any other provision of this regulation or Title 1 of the Environmental Code shall, upon conviction, be fined not less than 10 nor more than 500 dollars.

12.2 Any person who shall fail to comply with any order issued pursuant to the provisions of this regulation shall, upon conviction, be fined not less than 10 nor more than 500 dollars. Each aay's failure to comply with an order shall constitute a separate violation.

Section 13 Severability

If any title, regulation, paragraph, sentence, clause, phrase, or word of this code shall be declared invalid for any reason whatsoever, that decision shall not affect any other portion of this code or regulation, which shall remain in full force and effect; and to this end the provisions of this code and regulation are hereby declared severable.

10/19/89